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| 77213 7590 09/03/2008<br>Novak Druce + Quigg, LLP<br>1300 Eye Street, NW, Suite 1000<br>Suite 1000, West Tower<br>Washington, DC 20005 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| MORILLO, JANEL COMBS   |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/821,184

**Applicant(s)**

BENEDICTUS ET AL.

**Examiner**

Janelle Morillo

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10, 13-17, 21-25, 28-45, 48-68, 98, 99 and 101-129 is/are pending in the application.
- 4a) Of the above claim(s) 101-124 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 13-17, 21-25, 28-45, 48-68, 98, 99 and 125-129 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 081208.070708.060508
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on May 20, 2008 and June 19, 2008 have been entered.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(c) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-5, 7-10, 15, 16, 23, 29-33, 35, 36, 39, 98, 99, 125-129 are rejected under 35 U.S.C. 102(e) as being anticipated by Senkov et al (US 7,060,139).

Senkov teaches aerospace structural components such as sheet or extrusions for upper wing skins, lower wing skins, fuselage skins, stingers, fuselage frames (column 8 lines 1-8) with high strength (abstract) made from Al-Zn-Cu-Mg alloys with added Sc (abstract, claims). Senkov teaches said alloy comprises (in wt%): 6.5-8.0% Zn, 2.0-3.5% Mg, 1.5-1.65% Cu, 0.1-0.2% Zr, 0.08-0.09% Si, 0.085-0.1% Fe, 0.15-0.3% Mn, 0.1-0.2% Zr, 0-0.1% Hf (column 3 lines 8-18), as the base alloy (to which Sc is added), which significantly overlaps the presently claimed alloying ranges (cl. 1-5, 7-10, 15, 16, 23, 128-129) of Cu, Zn, Mg, Si, Fe, Zr, and Mn. Further, Senkov teaches examples #2 and #3 that fall within the presently claimed alloying ranges (see Table 1).

Though Senkov does not teach said Al-Zn alloy has “high” fracture toughness (cl. 1), or “good” corrosion resistance, said properties are held to be inherent in the substantially identical Al-Zn alloy taught by Senkov. Because Senkov teaches examples within the claimed alloying ranges, it is held that Senkov anticipates the presently claimed alloy product.

Concerning claims 7 and 125-127, the expression “about” allows up to  $\pm 10\%$  differences. *In re Preda*, 159 USPQ 342 and *In re Ayers*, 154 F 2d 182, 69 USPQ 109 (CCPA 1946). The Mg taught by ex 2 or 3 falls within “about 2.1” or “about 1.97” (cl. 7, 126, 127), the Zn taught by ex 2 or 3 falls within “about 7.2”.

The Mg & Cu equation in instant claims 2-4, the ranges of Mg and Cu taught by Senkov overlap said relationship (see above).

Concerning property claims 29, 30, if the prior art teaches the identical chemical structure (and as processed in substantially identical working and heat treatment tempers as in the instant specification), the properties applicant discloses and/or claims are inherently expected to be present.

Concerning claim 31-33, 98, 99, as stated above, Senkov teaches aerospace structural components such as sheet or extrusions for upper wing skins, lower wing skins, fuselage skins, stingers, fuselage frames (column 8 lines 1-8) with high strength (abstract) made from said Al-Zn-Cu-Mg alloys with added Sc.

Concerning claims 35, 36, and 39, Senkov teaches a typical thickness of 0.1 inch for an extrusion (example 1).

#### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 13, 14, 17, 21, 22, 24, 25, 34, 37, 38, 40-45, 48-68 rejected under 35 U.S.C. 103(a) as being unpatentable over Senkov (US 7,060,139), as applied to claim 1 above.

Senkov is discussed in paragraphs above.

Senkov teaches alloying ranges that overlap the presently claimed alloying ranges (cl. 6, 13, 14, 17, 21, 22, 24, 25, 41-45, 48-52), see discussion above as well as Senkov at claims 1, 3. Concerning independent claim 41, applicant has not shown the addition of Sc taught by Senkov is excluded by “consisting essentially of” transitional phrase. The transitional phrase “consisting essentially of” limits the scope of a claim to the specified materials or steps “and those that do

not materially affect the basic and novel characteristic(s)” of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976).

Concerning claims 34, 37, 38, 40, which mention product thickness, it would have been obvious to one of ordinary skill in the art to hot work the Al-Zn alloy taught by Senkov into a thick specimen, because Senkov teaches said alloy is suitable for a large variety of structural applications (column 8 lines 1-19), and product thickness is held to be a result effective variable (wherein the expected result of hot working deformation is degree of reduction/product thickness).

Concerning claims 53-61, see discussion of thickness and aerospace limitations above.

Concerning property claims 62-68, if the prior art teaches the identical chemical structure (and as processed in substantially identical working and heat treatment tempers as in the instant specification), the properties applicant discloses and/or claims are expected to be present.

Because Senkov teaches an overlapping alloy composition, it is held that Senkov has created a prima facie case of obviousness of the presently claimed invention. Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility.

6. Claims 1-10, 13-17, 21-25, 28-68, 98, 99, 125-129 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chakrabarti et al (US 2002/0121319 A1).

Chakrabarti et al teaches aerospace structural components (including wing units see abstract, Fig. 1) such as plate, extrusion, or forging with high strength and fracture toughness and

superior SCC resistance [0016] made from Al-Zn-Cu-Mg alloys (abstract). Chakrabarti et al teaches said alloy comprises (in wt%): 6-10% Zn, 1.2-1.9% Mg, 1.2-2.2% Cu, and one or more of: up to 0.4% Zr, up to 0.4% Sc, and up to 0.3% Hf (see [0023]), up to 0.1% Cr, up to 0.3% Mn [0027], which significantly overlaps the presently claimed alloying ranges (cl. 1, 5-10, 13-16, 23, 24, 28, 41, 45-52, 125-129) of Cu, Zn, Si, Fe, Zr, and Ti (see table 2 and footnote, see at least Ex. 6 etc.), and is a close approximation of the presently claimed alloying minimum of Mg of 1.92%. Because Chakrabarti teaches a broadly overlapping alloy composition, it is held that Chakrabarti has created a prima facie case of obviousness of the presently claimed invention.

Overlapping ranges have been held to be a prima facie case of obviousness, see MPEP § 2144.05. It would have been obvious to one of ordinary skill in the art to select any portion of the range, including the claimed range, from the broader range disclosed in the prior art, because the prior art finds that said composition in the entire disclosed range has a suitable utility. Additionally, "The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages," In re Peterson, 65 USPQ2d at 1379 (CAFC 2003).

A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference

disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.).

The Mg & Cu equation in instant claims 2-4, 42-44, the ranges of Mg and Cu taught by Chakrabarti overlap said relationship (see above).

Concerning claims 5-10, 13-16, 23, 24, 28, the alloying ranges taught by Chakrabarti meet the instant limitations (see above).

Chakrabarti teaches a Mn content of  $<0.2\%$  and Cr of  $\leq 0.1\%$  [0027], which overlaps the presently claimed ranges (cl. 15-17, 21-25, 50-52). Chakrabarti teaches up to 1.9% Mg, which is a close approximation of 1.92% Mg. The alloying ranges of Chakrabarti overlap those in instant claims 41, 45-52.

Concerning property claims 62-68, if the prior art teaches the identical chemical structure (and as processed in substantially identical working and heat treatment tempers as in the instant specification), the properties applicant discloses and/or claims are expected to be present. Additionally, Chakrabarti teaches an EXCO ration of EB or better (therefore EB, EA, or pitting only), see [0123].

Concerning claims 53-61, 64, 99, Chakrabarti teaches said alloy is formed by extrusion or forging (abstract) and formed into a structural component selected from a stringer, wing skin, or upper wing member (cl. 158, 199). Concerning the thickness of said product, Chakrabarti teaches a typical thickness of  $>2$  inches (Chakrabarti at cl. 3), or a thin plate member  $<2$  inches thick (Chakrabarti at cl. 11).

Concerning property claims 29, 30, if the prior art teaches the identical chemical structure (and as processed in substantially identical working and heat treatment tempers as in the instant



specification), the properties applicant discloses and/or claims are expected to be present.

Additionally, Chakrabarti teaches an EXCO ration of EB or better (therefore EB, EA, or pitting only), see [0123].

Concerning claims 31-40 and 98, Chakrabarti teaches said alloy is formed by extrusion or forging (abstract) and formed into a structural component selected from a stringer, wing skin, or upper wing member (cl. 158, 199). Concerning the thickness of said product, Chakrabarti teaches a typical thickness of >2inches (Chakrabarti at cl. 3), or a thin plate member <2 inches thick (Chakrabarti at cl. 11).

### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-10, 13-17, 21-25, 28-68, 98, 99, 125-129 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 24-

27 of copending Application No. 10/976154. Although the conflicting claims are not identical, they are not patentably distinct from each other because said claims of US'154 teaches an overlapping Al-Zn-Cu-Mg alloy product.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

9. Claims 1-10, 13-17, 21-25, 28-68, 98, 99, 125-129 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1-6, 8, 9, 12-24, 38, 40-42 of copending Application No. 10/819130. Although the conflicting claims are not identical, they are not patentably distinct from each other because said claims of US'130 teaches an overlapping Al-Zn-Cu-Mg alloy product.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### ***Response to Amendment/Arguments***

10. In the response filed on June 19, 2008 applicant amended various claims and submitted arguments traversing the rejections of record. The examiner agrees that no new matter has been added. The examiner agrees amended transitional phrase "consisting of" overcomes rejections in view of Flidlyander (US 6,726,878) and Shahani (6,027,582) (independent claim 41 contains transitional phrase 'consisting essentially of' but does not overlap Cu of Flidlyander'878). Shahani does not teach or suggest the instant Al-Zn alloy complete with the minimum Mn. The closest prior art is held to be Senkov or Chakrabarti as set forth in the rejections above.

11. As stated in the Final Rejection mailed 2/21/2008, applicant has overcome the 102(b) type rejections in view of Chakrabarti, as well as the 103(a) rejections in view of Flidlyander (2004/0101434).

12. Applicant's argument that the present invention is allowable over the prior art of record because the alloying range of Mg taught by Chakrabarti does not overlap that of the claimed invention has not been found persuasive. As stated above, A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties. *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) (Court held as proper a rejection of a claim directed to an alloy of "having 0.8% nickel, 0.3% molybdenum, up to 0.1% iron, balance titanium" as obvious over a reference disclosing alloys of 0.75% nickel, 0.25% molybdenum, balance titanium and 0.94% nickel, 0.31% molybdenum, balance titanium.). The amount of Mg taught by Chakrabarti of 1.9% held to be a close approximation of the claimed 1.92% Mg, and one skilled in the art would have expected them to have the same properties.

13. Applicant's argument that the present invention is allowable over the prior art of record because applicant has shown unexpected results with respect to a composition that falls within the compositional ranges disclosed by Chakrabarti has not been found persuasive. Evidence of unexpected properties may be in the form of a direct or indirect comparison of the claimed invention with the closest prior art which is commensurate in scope with the claims. See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) and MPEP §716.02(d) - § 716.02(e). An affidavit or declaration under 37 CFR 1.132 must compare the claimed subject matter with the closest prior art to be effective to rebut a prima facie case of obviousness. *In re Burckel*, 592

F.2d 1175, 201 USPQ 67 (CCPA 1979), see also MPEP 716.02(e). “A comparison of the claimed invention with the disclosure of each cited reference to determine the number of claim limitations in common with each reference, bearing in mind the relative importance of particular limitations, will usually yield the closest single prior art reference.” In re Merchant, 575 F.2d 865, 868, 197 USPQ 785, 787 (CCPA 1978) (emphasis in original). Where the comparison is not identical with the reference disclosure, deviations therefrom should be explained, In re Finley, 174 F.2d 130, 81 USPQ 383 (CCPA 1949), and if not explained should be noted and evaluated, and if significant, explanation should be required. In re Armstrong, 280 F.2d 132, 126 USPQ 281 (CCPA 1960). Applicant has not provided a clear nexus between the comparative results and the closest prior art of Chakrabarti.

***Allowable Subject Matter***

14. The examiner partially agrees with applicant’s argument that instant claim 28 is more commensurate in scope with Ex F and Ex B in the present specification. The examiner suggests deleting “about” from the claim language when referring to the Zn, Mg, and Cu ranges. The examiner agrees that the aluminum alloy product of claim 28 (once ‘about’ is removed from Zn, Mg, and Cu ranges) is commensurate in scope with Ex. F and Ex. B in the present specification (the ranges of cl. 28 are expected by one of skill in the art to behave in the same way as said examples), and that applicant has shown an unexpected increase in ST elongation together with an increase in strength (Table 14, 15) and unexpected increase in UPE (Table 9, 10) by virtue of the presently claimed particular Al-Zn-Mg-Cu alloy together with added Mn.

***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janelle Morillo whose telephone number is (571) 272-1240. The examiner can normally be reached on 7:30 am- 4:00 pm Mon-Wed.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art Unit  
1793

/J. M./  
Examiner, Art Unit 1793  
September 2, 2008

**Application Number****Application/Control No.**

10/821,184

**Examiner**

Janelle Morillo

**Applicant(s)/Patent under  
Reexamination**

BENEDICTUS ET AL.

**Art Unit**

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